IN THE SPECIFICATION

Please amend the paragraph on page 2, lines 7-27 as follows:

In orthogonal frequency division multiplexing, frequency spacing is arranged so as to null the correlation between a modulation band signal transmitted by an nth subcarrier of a multicarrier transmission and a modulation band signal transmitted by an (n+1)th subcarrier. If we assume that a symbol (a complex baseband signal) transmitted by the nth subcarrier (center frequency: ~~fn~~$\underline{f_n}$) is represented by ~~zn (= an + jbn)~~$\underline{z_n\ (= a_n + jb_n)}$, then we may write modulation band signal ~~sn(t) = Re[zn exp(j2π fn t)]~~$\underline{s_n(t) = \mathrm{Re}[z_n \exp(j2\pi f_n t)]}$ (where Re represents the real part of the complex number). The requirement for the (n+1)th subcarrier to be orthogonal to the nth subcarrier is that the cross correlation between ~~sn(t) and sn+1(t)~~$\underline{s_n(t) \text{ and } s_{n+1}(t)}$ be 0. If the frequency spacing between neighboring subcarriers is ~~fd~~$\underline{f_d}$ and the period of the symbol ~~zn~~$\underline{z_n}$ is T, then, in order for the cross correlation to become 0, it will suffice for ~~fd~~$\underline{f_d}$ = k/T (k = 1, 2, ···) to hold and the minimum spacing will be ~~fd~~$\underline{f_d}$ = 1/T. A multicarrier multiplexing scheme having frequency spacing is an orthogonal frequency division multiplexing scheme.

Please amend the paragraph on page 4, lines 8-27 as follows:

According to the principles of multicarrier CDMA, N-number of items of copy data are created from a single item of transmit data D, as shown in Fig. 14, the items of copy data are multiplied individually by respective ones of codes C_1 to C_N, which are spreading codes (orthogonal codes), using multipliers 9_1 to 9_N, respectively, and products DC_1 to DC_N undergo multicarrier transmission by N-number of subcarriers of frequencies f_1 to f_N illustrated in (a) of Fig. 15. The foregoing relates to a case where a single item of symbol data undergoes multicarrier transmission. In actuality, however, as will be described later, transmit data is

converted to parallel data of M symbols, the M-number of symbols are subjected to the processing shown in Fig. 14, and all results of M × N multiplications undergo multicarrier transmission using M × N subcarriers of frequencies f_1 to $\cancel{f_{N_M}}\underline{f_{NM}}$. Further, orthogonal frequency/code division multiple access can be achieved by using subcarriers having the frequency placement shown in (b) of Fig. 15.

Please amend the paragraph on page 5, lines 12-34 as follows:

In the case of a downlink (transmission by a base station), a code multiplexer 15 code-multiplexes the subcarrier signals generated as set forth above and the subcarriers of other users generated through a similar method. That is, for every subcarrier, the code multiplexer 15 combines the subcarrier signals of a plurality of users conforming to the subcarriers and outputs the result. A frequency interleaver 16 rearranges the code-multiplexed subcarriers by frequency interleaving, thereby distributing the subcarrier signals along the frequency axis, in order to obtain frequency-diversity gain. An IFFT (Inverse Fast Fourier Transform) unit 17 applies an IFFT to the subcarrier signals that enter in parallel, thereby effecting a conversion to an OFDM signal (a real-part signal and an imaginary-part signal) on the time axis. A guard-interval insertion unit 18 inserts a guard interval into the OFDM signal, an orthogonal modulator <u>19</u> applies orthogonal modulation to the OFDM signal into which the guard interval has been inserted, and a radio transmitter 20 up-converts the signal to a radio frequency, applies high-frequency amplification and transmits the resulting signal from an antenna.

Please amend the paragraph on page 6, line 30 to page 7, line 7 as follows:

Fig. 19 is a diagram showing structure on the receiving side of MC-CDMA. A radio receiver 21 subjects a received multicarrier signal to frequency conversion processing, and an orthogonal demodulator 22 subjects the receive signal to orthogonal demodulation processing. A timing-synchronization / guard-interval removal unit 23 establishes receive-signal timing synchronization, removes the guard interval GI from the receive signal and inputs the result to an FFT (Fast Fourier Transform) unit 24. The FFT unit 24 converts a signal in the time domain to N × M-number of subcarrier signals. A frequency deinterleaver 25 rearranges the subcarrier signals in an order opposite that on the transmitting side and outputs the signals in the order of the subcarrier frequencies.

Please amend the paragraph on page 20, lines 8-19 as follows:

After deinterleaving is carried out, a fading compensator 65 performs channel estimation on a per-subcarrier basis using the pilot time-multiplexed on the transmitting side and applies fading compensation. In the Figure, a channel estimation unit $65a_1$ is illustrated only in regard to one subcarrier. However, such a channel estimation unit is provided for every subcarrier. The channel estimation unit $65a_1$ estimates the influence $\exp(j\Phi)$ of fading on phase using the pilot signal, and a multiplier $65b_1$ multiplies the subcarrier signal of the transmit symbol by $\exp(-j\Phi)$ to compensate for fading. Like the multiplier $65b_1$, multipliers $65b_2 - 65b_N$ compensate for fading.

Please amend the paragraph on page 24, lines 19-30 as follows:

After deinterleaving is carried out, the fading compensator 174 performs channel estimation on a per-subcarrier basis using the pilot time-multiplexed on the transmitting side and applies fading compensation. In the Figure, a channel estimation unit $174a_1$ is illustrated only in regard to one subcarrier. However, such a channel estimation unit is provided for every subcarrier. The channel estimation unit $174a_1$ estimates the influence $\exp(j\Phi)$ of fading on phase using the pilot signal, and a multiplier $174b_1$ multiplies the subcarrier signal of the transmit symbol by $\exp(-j\Phi)$ to compensate for fading. <u>Like the multiplier $174b_1$, multipliers $174b_2$ – $174b_N$ compensate for fading.</u>